



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,081	12/01/2003	Ray Drumright	1096 B	4822
23408	7590	02/17/2005	EXAMINER	
GARY C COHN, PLLC 4010 LAKE WASHINGTON BLVD., NE #105 KIRKLAND, WA 98033			BOYKIN, TERRESSA M	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/726,081

Applicant(s)

DRUMRIGHT ET AL.

Examiner

Terressa M. Boykin

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-12,17, 19-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,17,19,27-31 and 33 is/are rejected.
- 7) ☒ Claim(s) 5-12, 20-26,32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12-1-03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1, 17, 19, 27-31, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6291597 see abstract, cols. 1-5, col 22 lines 18 through col. 23 line 35, in view of USP 3072680 see cols 1-4, col. 8 lines 60 through 75 and claims. .

US 6291597 discloses various compositions comprising a polylactide polymer with improved extensional viscosity and methods of making the same are disclosed. The polylactide polymer composition is prepared by providing in the composition polylactide polymer molecules which have been modified, relative to linear non-substituted polylactide, to provide increased molecular interaction among polylactide backbone chains in the composition.

The reference discloses that any of the compounds and/or methods described herein can be combined in order to form a viscosity modified polylactide polymer. For example, more than one type of non-initiating lactide reactant can be added to the prepolymer mixture in order to form a polymer that contains residues of more than one type of non-initiating lactide reactant. Chemically different types of non-initiating lactide reactants can be combined and added to the prepolymer mixture (e.g. both a reactant containing a cyclic ester and a reactant containing

Art Unit: 1711

an epoxide can be used). In addition, both non-initiating lactide reactants and initiating reactants can be added to the prepolymer mixture. Further, a combination reactant can be used instead of an initiating reactant and/or non-initiating lactide reactant in accord with the present invention. Moreover, a combination reactant can be combined with an initiating and/or non-initiating lactide reactant to promote molecular interaction in accord with the reference.

The reference discloses that improving extensional viscosity characteristics in a linear polymer can be accomplished by providing interaction between the long polymer backbones. Providing interaction between the long polymer backbones, typically, can be accomplished by increasing the weight average molecular weight of the lactide polymer melt, providing branching within the lactide polymer, and/or providing bridging in the lactide polymer. In this context, "bridging" refers to bonding between long polymer PLA-based chains. The term "branching" refers to either providing pendent groups from a linear PLA-based polymer chains or providing long polymer segments joined to one another through a residue. The term "PLA-based polymer chains" refers to polymer chains in which the majority of repeat polymer units or residues are unsubstituted lactic acid or lactide residues. Preferably they comprise at least 50% by weight residues from lactic acid or lactide. Providing branching and/or bridging in the lactide polymer can lead to a less linear polymer.

In accord with the reference, the prepolymer mixture (i.e. lactide monomer) may contain additional cyclic ester monomers along with lactide. For example, dioxanones (such as p-dioxanone), lactones (such as epsilon-

Art Unit: 1711

caprolactone or 4-valerolactone), dioxan(dione)s (such as glycolide or tetramethyl 1,4-dioxan-2,5-dione), or ester-amides (such as morpholine-2,5-dione).

The reference further discloses that multi-cyclic esters may also be used as non- initiating lactide reactants. For example, bis-2,2-(E-caprolacton-4-yl) propane is useable. Other useable multi-cyclic esters are identified in U.S. Pat. 3,072,680, the disclosure of which is incorporated herein by reference.

With regard to claim 27 –31 note examples 11-15,; with regard to claims 33 note example 17.

Thus, with regard to claims 1, 17, 19, 27-31,33 the reference discloses thermoplastic copolymers having in polymerized form units derived from a monocyclic ester or carbonate form bicyclic diester or carbonates prepared from the same components as claimed by applicants except for the particular structure as claimed. However, USP 307280, which is incorporated by reference by USP 6291597 discloses novel polylactones which contain at least one seven-membered lactone ring. The reference discloses that "it is to be understood that the foregoing examples are merely representative of the classes of polylactones listed. Many modification of the above examples are within the scope of this invention." The reference further discloses in col. 8 lines 63 though 75 that the dilactones can be reacted with or used as modifiers for use in other synthesis of many new chemicals such as that of substituted polyacids etc. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the method of producing the thermoplastic copolymer of the reference USP 6291597 in view of the USP 3072680 since such modification of

the polymers is described therein.

Consequently, the claimed invention cannot be deemed as unobviousness and accordingly is unpatentable.

Objected Claims

Claims 5-12, 20-26,32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

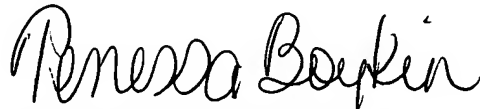
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is (**571-272-1700**).

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb



Examiner Terressa Boykin
Primary Examiner
Art Unit 1711